FIG. 1 csg1

GCCAGGCAGCTGCCSACCAGGCCGTGTATGTGAAGGTCAAGGCTGAAGCCCGGGAA LAAXQAVYVKVKA CTGCTGGGCCACCCGTGGTCTCTGTCTGTCTGTGGGTGCCAACTCACCACCTTTGAT SLCPVCGCQL 3

GGGGCCCGTGGTGCCACCACTCTGCTGTGTATGAAGCTCTCTTCCCGCTGCCCAGGA G A R G A T T L L V S M K L S S R C P G S TLLVSHRL CTACAGAATACCATCCCCTGGTACCGTGTAGTTGCCGAAGTCCAGATCTGCCATGGCAAA IPWYRVVAEVQICH ۲

ACGGAGGCTGTGGGCCAGGTCCACATCTTCTTCCAGGATGGGATGGTGACGTTGACTCCA V G Q V H I F F Q D G M V T L T

AACAAGGGTGTGTGGTGAATGGTCTCCGAGTGGATCTCCCAGCTGAGAAGTTAGCATCT NGLRUDLPAEKLA >

GTGTCCGTGAGTCGTACACCTGATGGCTCCCTGCTAGTCCGCCAGAAGGCAGGGGTCCAG V S V S R T P D G S L L V R Q K A G V Q GTGTGGCTTGGAGGTGGCTGTGATTGTGAGCAATGACCATGCTGGGAAA GKVAVIVSNDH

GCTTGWTCCAGTTCATCCCACCAGGAACGAAGGATTTT

FIG. 2A CSG2

CAGGACTGCGTGTGCACGGACAAGGTGGACAACACCCTGCTCAACGTCATCGCCTGC NNTLLNV Д > × Ω D C V C T

ACCCACGIGCCCIGCAACACCICCIGCAGCCCIGGGITCGAACTCATGGAGGCCCCCGGG ы E L M Ŀ ပ വ ഗ S C ۴ z

GAGTGCTGTAAGAAGTGTGAACAGACGCACTGTATCATCAACGGCCCGACAACCAGCAC z Ω Δ, ĸ. × H U 二 E O Ы ပ × ×

GTCATCCTGAAGCCCGGGGACTTCAAGAGCGACCCGAAGAACAACTGCACATTCTTCAGC z z × Δ, Ω Ŋ × Ĺī, Ω U

TGCGTGAAGATCCACAACCAGCTCATCTCGTCCGTTTCCAACATCACCTGCCCCAACTTT U ۲ н z Ŋ Ŋ Ŋ Н H O N H X H

GATGCCAGCATTTGCATCCCGGGCTCCATCACATTCATGCCCAATGGATGCTGCAAGACC ပ N d E E SIT U Δ, H

TGCACCCCTCGCAATGAGACCAGGGTGCCCTGCTCCACCGTCCCCGTCACCACGGAGGTT STVPVT C) > 24 ٤٠ ы z ĸ

TCGTACGCCGGCTGCAACAAGACCGTCCTCATGAATCATTGCTCCGGGTCCTGCGGGACA U Ŋ Ö Z Σ 니 > ۲ × ۲ U ပ

FIG. 2B csg2

S НО K. A Q A L K ഗ

GAGAAAACCAGCCAGCGTGAGGTGGTCCTGAGCTGCCCCCAATGGCGGCTCGCTGACACAC EVVLSCPNGGSLT ر م S

ACCTACACCCACATCGAGAGCTGCCAGTGCCAGGACACGGGTTTGCGGGGTTCCCCGGGC ט HIESCQCQDTV

ACCTCCCGCCGGGCCCGGGTTCCCCTAGGCATCTGGGGAGCGGGTGAGCGGGTGGGCA

CAGCCCCTTCACTGCCCTCGACAGCTTTACCTCCCCCGGACCCTCTGAGCCTCCTAAGCT CGGCTTCCTCTTCAGATATTTATTGTCTGAGTTTTTTGTTCAGTCCTTGCTTTCCAATA

ATAAACTCAGGGGGCATGCAAAAAAAAAAAAA

FIG. 3A csg3

ATTGGTGCTACCTGGCTCTCTGCAGCTCTACAGGTGAGGCCCAGCAGAGGGAG TAGGGCTCGCCATGTTTCTGGTGAGCCAATTTGGCTGATCTTGGGTGTCTTGAACAGCTAT TTATAGAGGCCCAAAGAGCTCCTGTAAGAGGGGAGAACTCTATCTGTGGTTTATAATCTT GGCTGCTTCAAAGGCCAGAGTCACAGGAAGGACTTCTTCCAGGGAGATTAGTGGTGATGG TGGGTCCACCCCAGTCCCTTTCAGCTGCTTAATGCCCTGCTCTCTCCCTGGCCCACC ACCATGAGATCGGTCCAAGAGTCCATTCCCCAGGTGGGAGCCAACTGTCAGGGAGGTCTT TCCCACCAAACATCTTTCAGTTGCTGGGAGGTGACCATAGGGCTCTGCTTTTTAAAGATAT TTCTAATGCAAGGGTCTCACACTGTGAACCACTTAGGATGTGATCACTTTTCAGGTGGCCA AGAGGAGAGTTAAAATGACCTCATGTCCTTGTCCACGGTTYTGTTGAGTTTTCACTC

FIG. 3B csg3

GAGTTGTACATATGTTTCACAGTACAGGATCTGTACATAAAAGTTTTCTTTTCCTAAACCAT AACGCTCCTCTGAAATGCTTGTTTTTTTTTTTTTTGCCGAAATAGCTGGTCCTTTTTTCGGG AGAGCCAAGGAAATTGGCTCTGGTTTTGGAAAATTTTTGCTGTTATTATAGTAAACATACA **AGTTAGATGTATAGAGTGTTTTGTATGTAACATTTTCTTGTAGGCATCACCATGAACANAG ATATATITITICTATITIANITIANITATATGTGCACTTCAAGAAGTCACTGTCAGAGAAATAAA** GAATTGTCTTAAATGTCATGATTGGAGATGTCCTTTTGCATTGCTTGGAAGGGGGTGTACCT TCACCAAGAGCCAATATCTAGGCATTTCCTCGGTAGCACAAATTTTCTNATTGCTTAGAA AATTGTCCTCCCTGTTCTTTCTGTCTGNAGACTTAAGTGAGTTAGGTCTTTAAGGAAAGC AAGGATGTC

FIG. 4 csg4

ATGAGTCCTGTGAAAAACAATGTGGGCCAGAGGCCTAAACATCGCCCTGGTGAATGGAACC Z Z ပ დ დ > z × >

ACGGGAGCTGTGCTGGGACAGAGGCATTTGACATGTACTCTGGAGATGTTATGCACCTA S >-Σ Ω A Ø ₩ G \ \ !

GTGAAATTCCTTAAAGAAATTCCGGGGGGTGCACTGGTGCTGGTGGCCTCCTACGACGAT > ᆸ > ᆸ K ڻ ပ ם ា × L

CCAGGGACCAAAATGAACGATGAAAGCAGGAAACTCTTCTCTGACTTGGGGAGTTCCTAC S J × 足 S ы Д z Σ × U

GCAAAACAACTGGGCTTCCGGGACAGCTGGGTCTTCATAGGAGCCAAAGACCTCAGGGGT O U ſz, > 3 ഗ Ω ø, [I4 ပ u

Z ۵, Ŋ Z × ᆸ O ធា ഗ

CCAGAGCTGCTGGAGGGGCTGCATGCCCCCGAAGCCATTTTAAGGGTGGCTGTCGC ۵, Д Σ ပ ს ப Σ ы u L ы

TCTTCCTCAGCCAGGGCCTGAAGAAGYTCCTGCCTGCATTAGGAGTCANAGCCCGGCAG GCTGNAGGAGGAGGAGCAGGGGGTGCTGGAAGGTGCTGCAGGCCTTGCACGCTGTG TCGCGCCT

FIG. 5A csg6

IGTCTACTCAAGGTATITICACAACTTATGACAACGAATGGTAGATACAGTGTAAAAAGTGCG R ပ z T T Y D T

GCCTCTCCGAGGAGTTAACGCAGCCAGACGGAGAGTGATACCCCAGCAGAGTCGAGCACT ڻ ن ഗ O' ď م Н > ĸ œ ĸ K A z > O ့ပ GTACATACCTGGCTGGATTGAGAATGAAATACAATGGAATCCACCAAGACCTGAAAT z 3 O4 Н ы Ω z ш Н 3 ပ

TAATAAGGATGATGTTCAACACAAGCAAGTGTGTTTCAGCAGAACATCCTCGGGAGGCTC U S R. Ŋ ſı, U م م × н > Ω ×

ATTIGECCTICEGATGECCAAATGCECCATACCTGAECTETCTCCCACCTGGCCAAAE ပ Д D L F <u>а</u> Н <u>Д</u>, A N P O ഗ Ø CACCGACCTGAAGGCGGAAATTCACGGGGCAGTCTCATTAATCTGACTTGGACAGCTCC ر ا SLI ပ ტ I н ы 4 × ٦ ۵

TGGGGATGATTATGACCATGGAACAGCTCACAAGTATATCATTCGAATAAGTACAAGTAT S ≃. Н X X H T A U I Ω Ω

TCTTGATCTCAGAGACAAGTTCAATGAATCTCTTCAAGTGAATACTACTGCTCTCATCCC > L ഗ ш z ŗ. × Ω œ L

FIG. 5B csg6

AAAĞGAAGCCAACTCTGAGGAAGTCTTTTTTAAACCAGAAAACATTACTTTTGAAAA z ធា ы S z

TGGCACAGATCTTTTCATTGCTATTCAGGCTGTTGATAAGGTCGATCTGAAATCAGAAAT D L K S D X V

ATCCAACATIGCACGAGTATCTITGTITATICCICCACAGACTCCGCCAGAGACACCTAG P Q T TCCTGATGAAACGTCTGCTCCTTGTGCCTAATATTCATATCAACAGCACCATTCCTGGCA

TTCACATTTTAAAAATTATGTGGAAGTGGGAGAACTGCAGTTGTCAATAGNCTAGG GGTGAATTTTTGTGCGGTGAATAATAATSATTTCANCCTTTTTTTTGRTTTATAAAAA CGGNTNCCCATTGGGNNTNTNGNGGGGGGGGNNTTTTAA

FIG. 6 csg7

AGTCGCTCTCCTAGCCCTTCTGTGCCTCACCCTCTGGCAATGCCATTCAGGCCAGGTC VALLALCASPSGNA TTCCTCCTATAGTGGAGTATGGAGGTGGTGGTGGAAAGCGATTCTCTCATTCTGGCAA SSYSGEYGGGGK CCAGTIGGACGGCCCCATCACCGCGTCCGAGTCAACATACTACATCGTAGG Q L D G P I T A L R V R V N T Y Y I V G

TCTTCAGGTGCGCTATGGCAAGGTGTGGGCGACTATGTGGGGGGTGGTCGCAACGGAGACCT ပ LOVRYGKVWSDYVG

GGAGGAGATCTTTCTGCACCCTGGGAATCAGTGATCCAGGTTTCTGGGAAGTACAAGTG E E I F L H P G E S V I Q V S G K Y K W

GTACCTGAAGAAGCTGGTATTTGTGACAAGAGGCCGCTATCTGTCTTTTTGGGAAAGA Y L K K L V F V T D K G R Y L S F G K D

CAGTGGCACAAGTTTCAATGCCGTCCCCTTGCACCCCCAACACGCGTGCTCCGCTTCATCAG SFNAVPLHPNT TGGCCGGTCTGGTTCTCTCATCGATGCCATTGGCCTGCACTGGGATGTTTACCCCACTAG G R S G S L I D A I G L H W D V Y P T S CTGCAGCAGATGCTGAGCCTCCTTTGGCAGGGGCACTGTGATGAGGAGTAAGAACT

CCTTATCACTAACCCCCATC

FIG. 7 csg8

TAAACTIGGTGTTITGTTGCTGTGTCTTTTGGTTGGTATITCAGTAAGTYFYTGGT ATTTCATTTTCTCTTAGGCATGAATCATACAAAACTCAATATAGAGCAATGTTTGTAAT GAATTGTTCTATTAACAAAGAGGAGGTTCTAAGATATAAAGCCTCAGAGAAGAAGAA ATTCTCAAATTTTATCTAAATGGATAAACTATTAACATAGAACATAAACCCCCAATTCTCC AAGGCGGGTCCATAAGAAGATGAGGTCTAACCGGGAAGATGCTGCTGAGAAGGCAGAGAC AGATGTGGAAGAAATCTATCACCCAGTCATGTGCACTGAATGTTCCACTGAAGTGGCAGT TTACGACAAGGATGAGTCTTTCATTTTTTCAATGTTTTTAGCAAGCCATTCCTAAAGAGC CCAACTGGCATTTAATTACCCAATACTGTATATAAGGCAAATATGGACAGTTACTTTCCT CTYGCCTGTYCATATCCTYCAGTGACATYGAGGAAGCAGTGTYTYCTCTYYYTYAAAGGGGA ATITITCCCCCTTATIGATGGACTGATATICATICTGTITTTTGATGAACATITTGGAAACT GTCGGGCTTTTTATTAAAGCTCTGTAGAATTAAAATGTTCTGGAATTAT

FIG. 8 csg9

CAGGAGGAGAGCCTTCCCCCAAGCAAACAATCCAGAGCAGCTGT3CAAACAACGGTGCAT GGTCATGGCTGCCAGAGCGCTCTGCATGCTGGGGCTGGTCCTGGCCTTGCTGTCCTCCAG AAATAAGGCCTCCTGGACCATGAATGCGAGTCCGCTGAGCTGCGTACCGGAGCCCACGGT WAARALCMLGLVL

YVGLSAN GGTGGACTGCGGCTACCCCCCATGTCACCCCCAAGGAGTGCAACAACGGGGGGTGCTGCTT N N N н у т Р К

TGACTCCAGGATCCCTGGAGTGCCTTGGTGTTTCAAGCCCCTGACAGGGAAGCAGGAATG PGVPWCFKPLTGKQ

CACCTTCTGAGGCACCTCCAGCTGCCCCCGGCCGGGGGATGCGAGGCTCGGAGCACCCT

TGCCCGGCTGTGATTGCTGCAGGCACTGTTCATCTCAGCTTTTCTGTCCCTTTTGCTCCC GGAAGCGCTTCTGCTGAAAGTTCATATCTGGAGCCTGATGTTTAACGTAGTCCCATGCTC CACCCGAAAAAAAAAAAAAAAAAAAAA

FIG. 9A CSG10

AAGCTCTTCTCACAGGACCAGCCACTAGCGCAGCTCGAGCGATGGCCTATGTCCCCGCAC

CGGGCTACCAGCCCACCTACAACCCGACGCTGCCTTACTACCAGCCCATCCCGGGGGGC YOPTYNPTLPYYOPIPG TCAACGTGGGAATGTCTGTTTACATCCAAGGAGTGGCCAGCGAGCACATGAAGCGGTTCT Σ æ Ы SVYIQGVAS TCGTGAACTTTGTGGTTGGGCAGGATCCGGGCTCAGACGTCGCCTTCCACTTCAATCCGC FVGQDPGSDVA GGTTTGACGGCTGGACAAGGTGGTCTTCAACACGTTGCAGGGCGGGAAGTGGGGCAGCG ပ ပ O^z F) z Ĺų > > Ω 3

AGGAGAGGAAGAGGAGCATGCCCTTCAAAAGGGTCCCCCCTTTGAGCTGGTCTTCATAG PFKKGAAFELVF Σ S

TCCTGGCTGAGCACTACAAGGTGGTGATAATGGAAATCCCTTCTATGAGTACGGGCACC O M V T H L Q V D G D L Q L

TCAACTTCATCGGAGGCCAGCCCCTCCGGCCCCCAGGGACCCCCGGATGATGCCACCTTACC ပ O L. R

FIG. 9B csg10

CTGGTCCCGGACATTGCCATCAACAGCTGAACAGCCTGCCCACCATGGAAGGACCCCCAA HOOLNSLPTME CCTTCAACCCGCCTGTGCCATATTTCGGGAGGCTGCAAGGAGGGCTCACAGCTCGAAGAA PPVPYFGRLQGLTA

CCATCATCATCAGGCTATGTGCCTCCCACAGGCAAGAGCTTTGCTATCAACTTCAAGGIII IKGYVPPTGFCACAGGCAAGAGCTTTGCAAGG

TGGGCTCCTCAGGGGACATAGCTCTGCACATTAATCCCCGCATGGGCAACGGTACCGTGG SGDIALHINPRMGNG

TCCGGAACAGCCTTCTGAATGGCTCGTGGGGATCCGAGGAGAAGAAGATCACCCACAACC EEKKIT SLLNGSWGS

CATTINGGICCCGGACAGITICITITGAICTGICCATTCGCIGGCTTGGAICGCTTCAAGG R C G L D GOFFOLSI TITACGCCAATGGCCAGCACCTCTITGACTITGCCCATCGCCTCTCGGCCTTCCAGAGGG YANGQHLFDFAHRLSA

TGGACACATTGGAAATCCAGGGTGATGTCACCTTGTCCTATGTCCAGATCTAATCTATTC D T L E I Q G D V T L S Y V Q I CTGGGGCCATAACTGGAAAACAGAATTATCCCCTAGGACTCCTTTCTAAGCCCCTA

FIG. 10 csg11

CTTGATATTAAAACCAGTGAACAAGCATGACACCTCTCTGAAACCTATTAGTGTCTCC V D I K T S E T K H D T S L K P I S V S

GAGGACAACGATAACGGATCAGTGCTGAGGTGGTCCTTTCTCTGACAGGTACAGGCTCTC Ω TTTCAGTTCCATTTTCACTGGGGGGGGTACAAATGAGCATGGTTCAGAACATACAGTGGAT F Q F H F H W G S' T N E H G S E H T V D HWGSTNEHGSE

GGAGTCAAATATTCTGCCGAGCTTCACGTGGCTCACTGGAATTCTGCAAAGTACTCCAGG

FWTYPGSLTHPPLYESVTWI ATCTGTAAGGAGGAGTGTCAGAGCAGTTGGCACAATTCCGGAGCCTTCTA ICKESISVSEQLAQFRSLL TTCTGGACCTACCCTGGCTCTCTGACTCCTCCTCCTTTTATGAGAGTGTAACTTGGATC

TCAAT

FIG. 11 csg12

CGGCTCCGGGCGGGCGTGGCTAGAAGGCGAGGCGCCCCGCGGACCATGGCGGCG ပ Ø R G A V T R R ሷ 3 A

GCGGCGGACGAGCGGAGTCCAGAGGCGGAGAAGAGGAAGAAGAGGAGGAGCAGTTGGTTCT ш Ш ы ш ப Ω ы ĸ о В > G

GGTGGÄATTATCAGGAATTATTGATTCAGACTTCCTCTCAAAATGTGAAAATAATGCAA z Ш O × S D F L S Ω н ပ

GGTTTTGGGCATTGACACTGAGGCCCCATTCTGGCAATGGACAGCTGTGTCTTTGCTGG ഗ L A M. D H d œ កា Ω

GGAGTATGAAGACACTCTAGGGACCTGTGTTATTTTGAAGAAAATGTTGAACATGCTGA ப z ப ы CVIF L G T

TACAGAAGGCAATAATAAAACAGTGCTAAAATATAAAATGCCATACAATGAAGAAGCTCAG Σ 王 ပ L K Y K X T > z

Z ы ы <u>ច</u> × × TLLTE ATGGCTGCAAATAAGGATATGGTTTCTCCCTTTTGACCCAACAGGTTTTGTTAACTTTTTCTA O O F u മ L Ĺz, 3 I R I

CCATGAAATTGAGGACGAGGAAGTGGTAGCTTTCAGCCCCGGTTAAATCTTTTGGATTTTGGG

AGGGGTGGGGTTTCAATG

FIG. 12 CSG13

GTGGCAGAAGAAAGATAGGTTGGAGAGAATTTGATTGGTTGATATAAAATGTTAAGTA **CCATGAATGNATGCTGTTAGGCTGGAATGCGCCAAGATAAAAGGTGGGGCATGGCATCAA** TCTTTTTTGGATGGTGAAAAACCTAAAATATATTGTGCCATTGTTTGCACACTTTGTG GATCTATAGAGATAGAAACTGGTCTGCCCAGGACTAGGGGTTGTCTAAGGATAAGGAGCT GAATATATAAAAACCGGTTAATTGTACTCACTAAAATGTCCTCCTTCTTAAATTTAAGC TGTTTNCTGGACAAGAAAAGGGAAAGNNACCAAGGGGNAAAAATTTT

FIG. 13 csg14

GCCCTGGGCTTTGGGGGGGGTCCCAAACATGGTATGCAGAAATGTGATGGTTACAGGTCAG TACAACCTCAGTCCTTAGAACCCCTCCACACTTCAGCTCTGCACCCCACTTTCCTGTCATT TAITTATATAGGACTGTAGTTTTTTTTAGTTCGAGAGCCTTTCGAAGCTTAATTTATATT CTTTCTTTGTACCTTTTTTCTAAAATTACCAAAGATATTACACAAAGGTAAATTAATGTT **CTCTGTTTTATGCTTTATCTGATGGCAAATATCCTCTTATTGTTGATCAAAGGGGGC** AAAAGAATTTAGAGGCAAATGAACAAGCGATAGGCTATTGCAACCTGAGAAAAAGAACTG NTCCTTCCATCGTAAATTTAGNAGNCCAAGTAGGTAATGGGAACCAAAGTTGTTACTTTT TTCTAGTAGTTATTTTTCCCTTTTTTTTTTTGTGGTACCTCTTACAGNGNCCCAAAACT CCATTCTCTTTAAAGGGGTTTTTTATGGGGGGCTTACTGCAGGTTAAAAATTGGGGNCCAC CATITITAAAGGGGGGTACCAGAAGGGAGGGGGGTCCCCNITINCNAAAAAAAAAATTG